

ABSTRACT OF THE DISCLOSURE

Motion/Saturation detection system and method for synthesizing high dynamic range motion blur free images from multiple captures, the system and method utilizing photocurrent estimation to reduce read noise and enhance dynamic range at the low illumination end, saturation detection to enhance dynamic range at the high illumination end, and motion blur detection to ensure the photocurrent estimation is not corrupted by motion. Motion blur detection also makes it possible to extend exposure time and to capture more images, which can be used to further enhance dynamic range at the low illumination end. The present invention operates completely locally, making it well suited for single chip digital camera implementations.

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